NEUROENDOCRINE TUMOR RESEARCH FOUNDATION
DEDICATED TO CURING NEUROENDOCRINE CANCER

RESEARCH GRANT AWARDS

Announced January 2024

INVESTIGATOR AWARDS

Talya Dayton, PhD
Group Leader, European Molecular Biology Lab (EMBL), Barcelona

Using Patient-Derived Tumor Organoids to Uncover Mechanisms of Pulmonary NET Progression
As part of a previous NETRF-funded project, Dr. Dayton and her colleagues found a way to grow samples of pulmonary NETs in the lab by making 3D cell lines called patient-derived tumor organoids or PDTOs. In this project, Dr. Dayton and her research group will use these pulmonary NET PDTO models, together with state-of-the-art gene editing techniques and molecular analyses, to find out how pulmonary NETs develop and grow.

Jeffrey Frost, PhD
Professor and Assistant Dean for Graduate Studies, The University of Texas Health Science Center at Houston

Harnessing Ferroptosis Initiating Drugs to Target GEP-NETs
Neuroendocrine tumor cells are resistant to most cancer therapies, which target cell proliferation. Dr. Frost and his team will determine whether neuroendocrine tumor cells can be killed by combinations of drugs that cause oxidative stress. In addition, the team will investigate whether these drugs can be targeted specifically to neuroendocrine tumors by attaching them to Somatostatin Receptor Agonists (SSAs), which are commonly used for diagnostic and therapeutic purposes in neuroendocrine tumor patients.
Funded by The Carol DeBacker Charitable Trust.

Nancy Joseph, MD, PhD
Professor, University of California, San Francisco

Molecular Mechanisms in the Progression of Pancreatic Neuroendocrine Tumors
This project aims to understand which tumors are at risk for progression from low-grade to high-grade and why. We will use state-of-the-art DNA technologies to examine the genomes and epigenomes of panNETs at multiple time points within individual patients who have undergone serial biopsies over time, including in those with stable disease, those with progressive disease, and those who were high-grade at initial diagnosis.

Daniel Schramek, PhD
Senior Investigator, Lunenfeld-Tanenbaum Research Institute, part of Sinai Health and Associate Professor, University of Toronto

Establishing & Characterizing a Pancreatic Neuroendocrine Tumor Mouse Model with Humanized Telomeres
One of the challenges in studying pancreatic neuroendocrine tumors (PNETs) is that there hasn't been a good animal model to test new treatments. Dr. Schramek and his team have developed a special mouse that can develop PNETs just like humans do. This mouse has the same genetic changes that are seen in human PNETs, and they can control when these changes happen. This will allow them to study how the cancer develops and which genes trigger progression. They will also use this mouse model to identify new drug targets.

Benjamin Viglianti, MD, PhD
Associate Professor, University of Michigan

Development of a Low Molecular Weight Fluorine-18 FAPI Imaging Agent and Companion Radiotherapeutic
Dr. Viglianti and his team will develop and test a new low molecular weight F-18 labeled fibroblast activation protein inhibitor (FAPI) that can be labeled with therapeutic isotopes. This research aims to address an unmet need in patients who do not qualify for standard PRRT due to their tumor's lack of SSTR expression. FAP is a promising target, which is overexpressed in the tumor microenvironment of more aggressive tumors, such as high-grade NETs and neuroendocrine carcinomas.

MENTORED RESEARCH AWARDS

Nicolas Alcala, PhD
Scientist, International Agency For Research On Cancer

Reconstructing the Evolutionary History of Neuroendocrine Tumor Subtypes
Dr. Alcala and colleagues have previously discovered subtypes of lung NETs with distinct molecular profiles (DNA alterations, gene expression), paving the way for a novel, more precise classification of NETs that better accounts for prognosis and therapeutic targets. Nevertheless, little is known of the origin of these subtypes. Dr. Alcala will use next-generation sequencing data to study how the DNA of NETs and the patient's immune response interact to determine a patient's NET molecular subtype and clinical course.
Funded by Elaine Nord.

Elham Barazeghi, PhD
Research Fellow, Uppsala University

Epigenetic Regulation of Tumor Metastasis in Small Intestinal Neuroendocrine Tumors (SI-NETs)
In this research project, Dr. Barazeghi will use advanced sequencing technologies in small intestinal neuroendocrine tumors (SI-NETs) to investigate the driver epigenetic mechanisms that occur in a primary tumor to make it metastatic. This knowledge will advance our understanding of the mechanisms underlying metastasis with the ultimate goal of improving prognostic factors for SI-NET metastasis and informing strategies to prevent metastases.
Funded by The Carol DeBacker Charitable Trust.

PILOT AWARDS

Sharon Gorski, PhD
Professor and Distinguished Scientist, BC Cancer

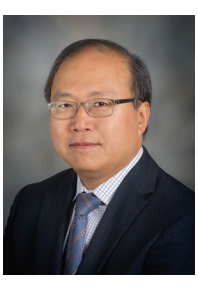
Glycomic Characterization of Pancreatic Neuroendocrine Neoplasms
Dr. Gorski and team will characterize the glycomes, or the sugar molecules, of pancreatic neuroendocrine neoplasms (PNENs) to identify a new class of candidate biomarkers and therapeutic targets for PNEN patients. Patients with PNENs can vary greatly with respect to symptoms, disease progression and treatment response, but the reasons for such dramatic patient-to-patient variability are not well understood. Through the application of glycomics, this study has the potential to uncover a new class of biomarkers to help identify high-risk patients so that they can be treated with the best options for their disease.

Susanne Kossatz, PhD
Assistant Professor, Technical University of Munich

Developing a Functional In Vitro Model to Investigate Renal Toxicity of Radionuclide Therapy Agents
Dr. Kossatz and her team aims to establish a new cell-based technology that could accelerate discovery and optimization of radiopharmaceuticals for NET treatment. High kidney uptake and retention of therapeutic radiopeptides is currently a major factor that limits clinical translation and application of peptide receptor radionuclide therapy (PRRT). Their goal is to establish an in vitro assay system using functional proximal tubule epithelial cells that can predict in vivo kidney uptake and retention of radiopharmaceuticals.

Anguraj Sadanandam, PhD
Director, Centre for Global Oncology & Reader, The Institute of Cancer Research

Deciphering Novel Neoantigen Landscape and Vaccine Targets in Pancreatic Neuroendocrine Neoplasms
Dr. Sadanandam's research aims to improve treatment for pancreatic neuroendocrine neoplasms (PanNENs), especially the aggressive subtype, by addressing the limited effectiveness of current therapies, including immune checkpoint treatment. The urgency stems from PanNENs' resistance to standard therapies due to their heterogeneity. The proposed solution involves developing a groundbreaking neoantigen-based (abnormal proteins specific to cancer cells) vaccination strategy, offering new hope for patients with aggressive PanNENs when traditional immunotherapy is not feasible.
Funded by Laura and Lew Moorman.



James Yao, MD
Professor and Department Chair, University of Texas MD Anderson Cancer Center

Generation and Characterization of a Novel Genetically Modified Patient–Derived NET Organoid System
The slow growth of NETs makes in-vitro propagations challenging and experimental approaches impractical. The paucity of clinically relevant models has limited progress in the field. Dr. Yao and his team will develop a new NET model system that will enable them to turn on growth to induce enough NET cell growth to conduct experiments.
Funded by NETRF's generous 2023 Giving Tuesday donors.